

New challenges for agency based syringe exchange schemes: analysis of 11 years of data (1991–2001) in Merseyside and Cheshire, United Kingdom

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Abstract

The Merseyside and Cheshire Drug Monitoring Unit has collected attributable data on agency based syringe exchange program (SEP) clients between 1991 and 2001, representing 14,491 individual injectors. On first presentation to a SEP, clients provide information relating to their drug use and drug service contact. Details relating to all subsequent syringe transactions are also recorded. Over 206,000 transactions took place, accounting for 6,595,099 syringes provided and an estimated 7,184,727 returns.

There was a sixfold increase in the number of new clients using anabolic steroids ($P < 0.001$) with these users currently constituting the largest group of new clients. The reverse is true for new heroin using clients who have significantly declined over the same period ($P < 0.05$). Service utilisation by opiate and stimulant users has changed over time. Opiate users have attended SEP significantly less frequently ($P < 0.01$) but obtain greater quantities of injecting equipment at each attendance ($P < 0.001$). While the visit rate for stimulant users has fluctuated over time, this group of users are also collecting a significantly greater quantity of needles and syringes at each attendance ($P < 0.05$).

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Introduction

Syringe exchange programs (SEPs) were first established in the United Kingdom in the mid 1980s, with their primary aim being the prevention of HIV transmission (Advisory Council on the Misuse of Drugs, 1988). The introduction of SEPs as an integral part of a harm reduction strategy have been credited as averting an HIV epidemic in the UK (Stimson, 1995, 1996). Data from the Unlinked Anonymous HIV Prevalence Monitoring Programme, provides evidence of relatively low HIV prevalence among injectors in England and Wales. Samples from over 50 drug services (including structured drug treatment and SEP) are included in this survey and indicate an HIV prevalence rate of 3.6% in London and 0.21% for England and Wales (outside London) and as low as 0.12% for the North West of England (Unlinked Anonymous HIV Prevalence Monitoring Programme, 2001).

Since the introduction of agency based SEP in 1986 in areas such as Liverpool (Derricott, Preston, & Hunt, 1999) there has been a comprehensive expansion of non-pharmacy exchanges including dedicated SEP and syringe exchange schemes (SESSs) provided at specialist drug services. A study of SEPs across the UK in 1997 reported that nearly all Health Authorities in England and Wales and Health Boards in Scotland provided both pharmacy based and non-pharmacy based (agency based) SEPs (Parsons, Hickman, Turnbull, McSweeney, & Stimson, 2002).

Routine monitoring of specialist drug treatment and care services (including substitute prescribing, inpatient detoxification and residential rehabilitation) is well established. The Regional Drug Misuse Databases, since 1990–1991, and the National Drug Treatment Monitoring System (NDTMS) (introduced in 2001), address the main information and monitoring needs of the UK's National Drug Strategy and contribute to a public health surveillance system (Donmall, Hickman, & Glavas, 2000). However, this system does not collect data from low threshold to access services including SEP (those now classed within Tier 2 of the United Kingdom's National Treatment Agency Models of Care for

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treatment of drug misusers (National Treatment Agency, 2002)).

Merseyside and Cheshire, in the North West of England, has an estimated population of 2.4 million and incorporates eight Drug Action Team (DAT) areas. High levels of problematic drug use within the DAT areas of Merseyside and Cheshire have been identified, with an estimated rate for Liverpool in 1998 of 42.7 problematic drug users per 1000 population, within the age group of 25 and 44 years of age (Beynon, Bellis, et al., 2001). The Merseyside and Cheshire Drug Monitoring Unit, has monitored and reported on agency based SEP activity and SEP client characteristics within this geographical location since 1991, reflecting the service provision and uptake of 18 agency based SEP. This paper presents findings from the analysis of 11 years of attributable agency based SEP data, relating to the clients' drugs of use and changes in the pattern of SEP utilisation by clients.

Methods

The monitoring system

The SEP monitoring system requires agency based SEP to provide data on all syringe exchange transactions. Agencies provide data in a paper format on a monthly basis and these are inputted onto the SEP database within the drug monitoring unit. Each client is identified by use of an individualised attributor code comprising their initials, date of birth and sex. The SEP monitoring system enables each syringe exchange transaction to be attributed to a specific individual. On presentation to a SEP for the first time, a client is also asked for brief details including their main problem drug which led to presentation at an SEP, if they are in receipt of structured drug treatment, how they became aware of the SEP and their geographical area of residence. Reporting agencies also record the date and time of presentation, the number of clean syringes and needles provided and an estimate of the number of used syringes returned. At subsequent visits only the client's attributor (or client number which is linked to the attributor code), together with data relating to the specific transaction are recorded.

The utilisation of an attributor code is essential in identifying and removing double counting of individuals both within agencies over time and across agencies throughout Merseyside and Cheshire. The use of an attributor code to identify and monitor drug users presenting to SEP is similar to that of the Drug Misuse Database and the new NDTMS which is used to monitor structured drug treatment by specialist drug treatment agencies. The use of an attributor code (initials, date of birth and sex) has been identified as the optimal level of anonymity for drug monitoring purposes on an individual basis (Crabbe & Donmall, 1996). Agency based SEP clients provide verbal consent for data to be utilised for monitoring and research purposes.

Data manipulation and analysis

Data were extracted from the database and analysed using SPSS. Utilising the attributor codes, clients' SEP transaction records were aggregated to produce individual client service uptake profiles, together with client characteristic profiles such as their main problematic drug leading to SEP presentation. Correlations were performed to identify changes in the number of new SEP clients using each drug, the number of visits to SEP and the number of syringes provided to clients over the 11 years in question.

Results

During the 11 years of the SEP monitoring system, a total of 206,789 syringe exchanges were reported from 18 agency based SEP across Merseyside and Cheshire. Syringe transactions were provided to 14,491 individual injectors. These transactions accounted for 6,595,099 syringes provided and an estimated 7,184,727 returns. In the year 2001, 16 agencies reported to the system. These non-pharmacy SEP can be divided into two broad categories; 'integrated' SEP—specialist drug services such as Community Drugs Teams and Drug Dependency Units—services providing drug treatment including substitute prescribing in addition to syringe exchange and 'separate' SEP—agencies that are separate to drug treatment. Throughout the monitoring period, the majority of SEP in Merseyside and Cheshire have been 'integrated' services, with 14 of the 16 agencies reporting in 2001 being classed as 'integrated' services.

During the reporting period there have been an average (mean) number of 18,799 SEP transactions per year, with 14,085 transactions in 1991 and 16,729 in 2001. However, there has been a steady decline in transactions since a peak of 20,611 in 1996 (Fig. 1). The number of individual clients attending SEP each year increased during the early 1990s from 2136 in 1991 to 3614 in 1996 representing a 69% increase. From 1997 to 2001 the number of individuals accessing SEP has remained stable, averaging (mean) 3660, annually.

New clients on the database represent new clients to the monitoring system, therefore, during the first year of SEP monitoring the number of new clients will be disproportionately high. As the database is populated, this effect will decrease in subsequent years. With the exception of 1996, when 1437 new clients to SEP in Merseyside and Cheshire were reported, and excluding the first 2 years of reporting, the number of new clients has remained between 1044 (1994) and 1266 (2001).

The proportion of new clients reporting heroin use has decreased from 55% in 1991 to 44% in 2001. Conversely anabolic steroid users have increased from 6 to 44% for 1991 and 2001, respectively. Considering only new users, the number of new anabolic steroid users has significantly increased in the 11 years of monitoring ($P < 0.001$) and

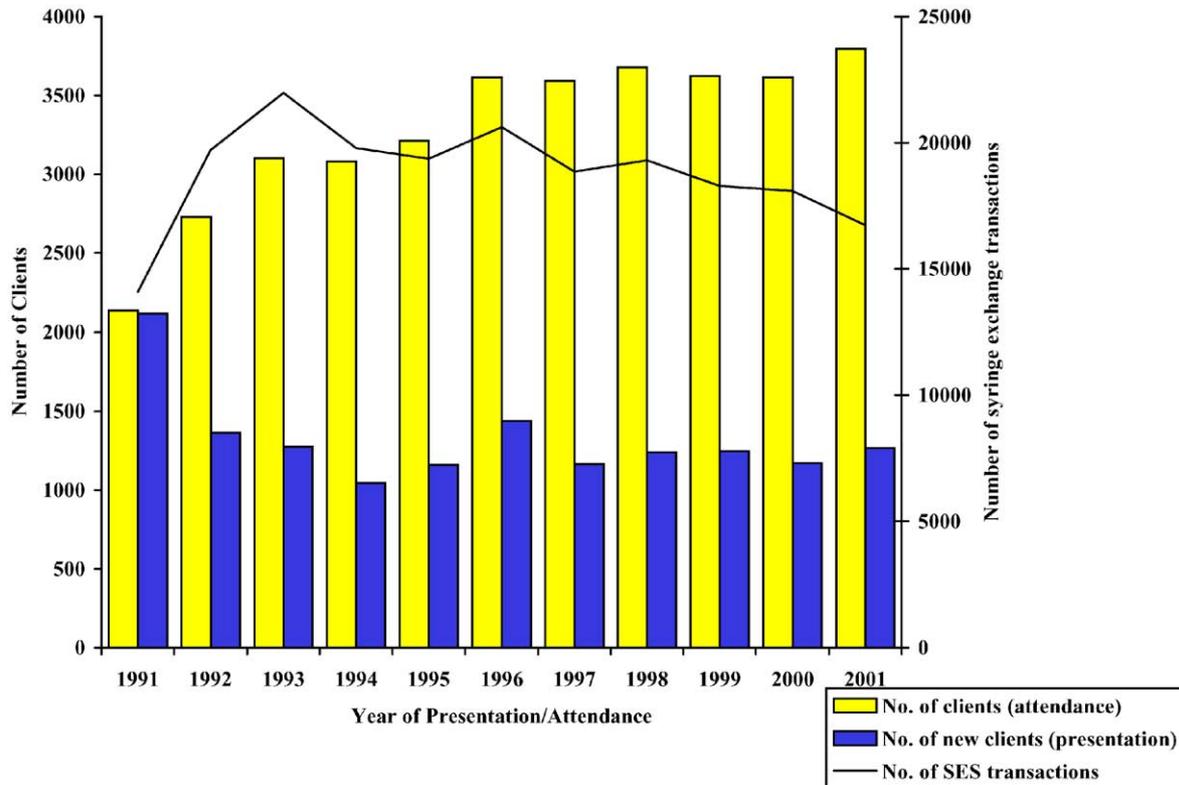


Fig. 1. Number of transactions, clients attending and new clients presenting to agency based SESs in Merseyside and Cheshire (1991–2001).

the number of heroin users has significantly decreased ($P < 0.05$) (Fig. 2).

Analysis of the mean number of syringe exchange transactions per year indicates different frequencies dependent

on the main drug of use. While the overall mean frequency of transactions per client has decreased over time, from 6.59 visits per year to 4.41, differences have been identified between clients, both in terms of their main

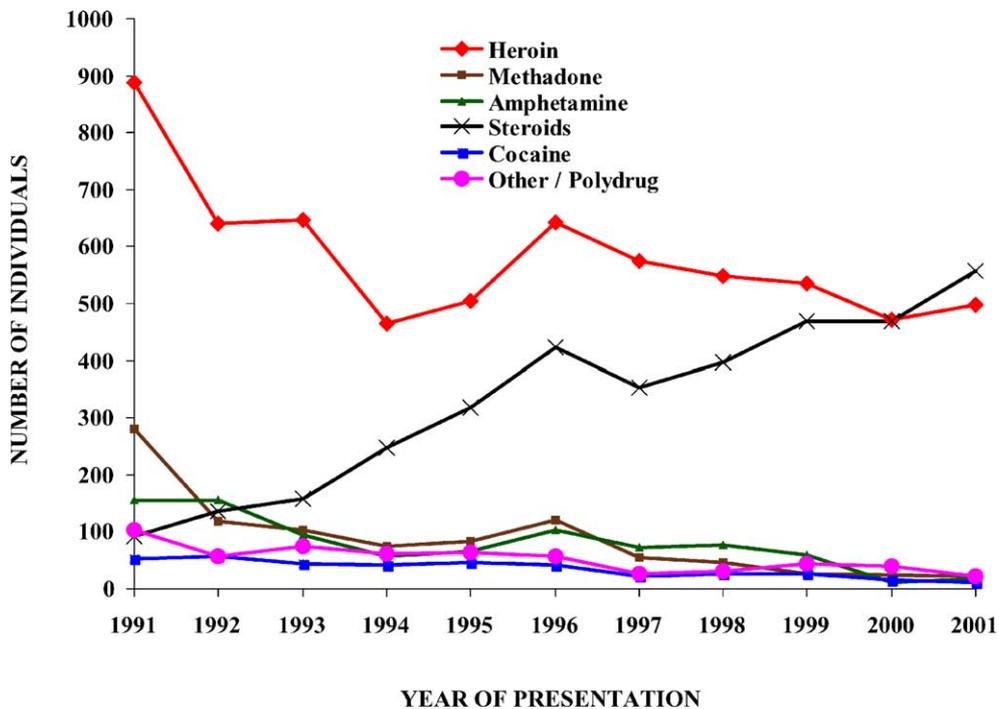


Fig. 2. Main drug of use: new clients attending agency based SESs in Merseyside and Cheshire by year of presentation (1991–2001).

Table 1
Mean and median (interquartile range) number of SES transactions per year by main drug of use

Year	Annual SES transaction rate by main drug of use											
	Anabolic steroids		Heroin		Amphetamines		Cocaine		Opiates		Stimulants	
	Mean ^a	Median ^a (Q1, Q3)	Mean	Median (Q1, Q3)	Mean	Median (Q1, Q3)	Mean	Median (Q1, Q3)	Mean ^a	Median (Q1, Q3)	Mean	Median (Q1, Q3)
1991	2.7	2 (1, 3)	5.6	2 (1, 6)	6.0	2 (1, 7)	3.8	2 (1, 4)	6.6	3 (1, 8)	5.5	2 (1, 6)
1992	3.0	2 (1, 3)	6.3	2 (1, 7)	8.0	3 (1, 11)	3.5	2 (1, 4)	7.2	3 (1, 8)	6.9	3 (1, 8)
1993	2.8	2 (1, 3)	6.4	3 (1, 7)	8.2	3 (1, 9)	5.3	2 (1, 4)	7.1	3 (1, 9)	7.4	3 (1, 8)
1994	2.7	2 (1, 3)	6.3	3 (1, 7)	7.6	3 (1, 8)	3.9	2 (1, 4)	6.7	3 (1, 8)	6.6	3 (1, 7)
1995	2.4	1 (1, 3)	6.6	3 (1, 8)	6.4	2 (1, 9)	4.8	2 (1, 4)	6.8	3 (1, 9)	5.9	2 (1, 7)
1996	2.2	1 (1, 2)	6.5	3 (1, 8)	6.2	2 (1, 6)	4.5	2 (1, 4)	6.7	3 (1, 8)	5.6	2 (1, 5)
1997	2.4	1 (1, 3)	5.6	2 (1, 6)	7.4	3 (1, 7)	4.0	2 (1, 4)	5.7	3 (1, 6)	6.5	2 (1, 6)
1998	2.6	1 (1, 3)	5.7	2 (1, 6)	7.3	3 (1, 8)	4.2	2 (1, 4)	5.8	3 (1, 7)	6.5	2 (1, 7)
1999	2.3	1 (1, 2)	5.6	2 (1, 6)	7.3	2 (1, 6)	4.7	3 (1, 6)	5.7	3 (1, 6)	6.6	2 (1, 6)
2000	2.2	1 (1, 2)	5.9	2 (1, 6)	8.1	3 (1, 7)	4.7	2 (1, 4)	6.1	3 (1, 7)	7.0	2 (1, 6)
2001	2.1	1 (1, 2)	5.2	2 (1, 6)	6.6	3 (2, 7)	3.8	2 (1, 4)	5.5	3 (1, 6)	5.6	2 (1, 6)

Correlations between year and mean used Pearson's correlation coefficient. Correlations between year and median used Spearman's rank correlation coefficient.

^a Correlation significant at the 0.01 level (2-tailed).

drug and changes within main drug of use over time (Table 1).

Anabolic steroid users accounted for the lowest number of visits per year during the 11 years of monitoring (mean number of visits per year, 2.37). Those injectors identifying polydrug use or those using less frequently cited main drugs such as cyclizine, temazepam and temgesic presented most frequently to SEP (mean number of visits per year, 9.99).

Analysis of the frequency of syringe exchange transactions over time indicates a significant reduction (Pearson's) in the number of SEP visits during the year by both anabolic steroid users and opiate users, although only anabolic steroid users were significant using non-parametric analyses (see Table 1). While a reduction in visit frequency is ob-

served within heroin users, the change is only statistically significant when opiate users are analysed in combination (heroin, methadone and less frequently cited opiates of use such as dihydrocodeine, dipipanone and morphine).

There has been a significant increase in the mean number of clean syringes taken at syringe exchange transactions over time, from 24.8 in 1991 to 35.0 in 2001 ($P < 0.01$). The amount of syringes taken by clients is influenced by their main drug of use, with cocaine users taking the lowest number of syringes, 24.3 and amphetamine users taking the highest, 38.8. There has also been a significant increase in the number of syringes taken by heroin users and opiate users in general and in amphetamine and cocaine users and stimulant users as a group (see Table 2). Further analysis of

Table 2
Mean and median (interquartile range) number of clean syringes taken per syringe exchange transaction by main drug of use

Year	Number of clean syringes taken per SES transaction by main drug of use											
	Anabolic steroids		Heroin		Amphetamines		Cocaine		Opiates		Stimulants	
	Mean	Median (Q1, Q3)	Mean ^a	Median ^b (Q1, Q3)	Mean ^b	Median ^b (Q1, Q3)	Mean ^b	Median (Q1, Q3)	Mean ^a	Median ^c (Q1, Q3)	Mean ^b	Median ^b (Q1, Q3)
1991	40.9	20 (10, 31)	23.0	10 (5, 30)	11.9	5 (2, 10)	26.2	10 (4, 30)	23.0	10 (5, 30)	13.9	5 (2, 15)
1992	43.7	20 (10, 40)	26.6	10 (5, 30)	18.5	8 (2, 20)	17.0	10 (5, 20)	24.7	10 (5, 30)	18.3	10 (2, 20)
1993	49.5	20 (5, 40)	28.9	10 (5, 30)	18.8	5 (2, 20)	22.2	10 (3, 30)	27.2	10 (4, 30)	19.5	6 (2, 20)
1994	34.4	15 (8, 40)	30.8	10 (4, 30)	29.1	10 (3, 20)	22.8	10 (4, 20)	29.6	10 (5, 30)	28.1	10 (3, 20)
1995	28.6	14 (7, 30)	29.5	10 (5, 30)	40.9	10 (3, 30)	19.6	10 (5, 20)	29.4	10 (5, 30)	35.5	10 (4, 28)
1996	29.3	15 (6, 30)	30.6	10 (4, 30)	56.6	10 (4, 30)	27.7	6 (2, 20)	30.0	10 (4, 30)	49.5	10 (3, 30)
1997	37.6	20 (10, 40)	31.8	10 (5, 30)	58.8	11 (4, 40)	20.0	10 (5, 15)	31.8	10 (5, 30)	52.0	10 (4, 34)
1998	33.9	20 (8, 40)	30.8	10 (4, 30)	56.7	10 (5, 30)	22.0	6 (4, 20)	31.0	10 (4, 30)	50.4	10 (5, 30)
1999	36.8	20 (10, 40)	32.0	10 (5, 30)	62.8	10 (5, 30)	24.8	10 (4, 20)	32.5	12 (5, 30)	55.5	10 (5, 30)
2000	46.1	30 (15, 50)	35.2	20 (6, 40)	38.2	10 (3, 30)	37.6	20 (5, 40)	34.8	20 (6, 40)	38.1	10 (4, 30)
2001	44.3	25 (12, 50)	35.5	20 (6, 40)	35.0	10 (5, 30)	35.1	20 (10, 50)	35.4	20 (6, 40)	35.0	10 (5, 30)

Correlations between year and mean used Pearson's correlation coefficient. Correlations between year and median used Spearman's rank correlation coefficient.

^a Correlation significant at the 0.001 level (2-tailed).

^b Correlation significant at the 0.05 level (2-tailed).

^c Correlation significant at the 0.01 level (2-tailed).

SEP data pertaining to 2001 has identified that during that year, 398 SEP transactions by anabolic steroid users (16.5% of transactions with this group of injectors) involved the provision of between 100 and 1000 syringes.

Discussion

Agency based SEP in Merseyside and Cheshire have continued to attract and retain injecting drug users during the 11 years of monitoring. This continuing level of agency based SEP uptake should be taken within the context of a high level of pharmacy based SEP provision. Between 1st April 2000 and 31st March 2001, 4047 individuals (for whom full attributor data were provided) attended pharmacy based SEP compared to 3456 at agency based SEP. Of particular significance is the fact that only 17.5% of agency based SEP clients were also seen at pharmacy SEP during this period, illustrating a substantially different client population (Beynon, Birtles, & Bellis, 2001).

The changing profile of SEP clientele, in particular, the dramatic rise in anabolic steroid users attending SEP raises several major issues. Firstly, the increase provides evidence of the extent of anabolic steroid use in Merseyside and Cheshire and potentially the UK as a whole. While the increase in this client group's attendance at SEP may not reflect a similar increasing trend in anabolic steroid use in the population as a whole, it does indicate that significant numbers of individuals are using these drugs. Furthermore, research undertaken in the North West of England has identified substantial numbers of anabolic steroid users accessing SEP for injecting equipment for a number of other anabolic steroid users (Lenehan, Bellis, & McVeigh, 1996a). This is further supported by closer examination of the SEP data. With 16.5% of SEP transactions by anabolic steroid users involving the provision of 100 or more syringes, and the identification of common regimes for anabolic steroid use entailing the injection of these drugs on a weekly or twice weekly basis only (Lenehan & McVeigh, 1998), it is reasonable to assume that at least some of these clients are obtaining injecting equipment for several users.

The increasing presentation and attendance of anabolic steroid users at SEP raises an issue regarding the current knowledge, skills and resources at these services in providing a comprehensive harm reduction package for this client group. While some services have been proactive in developing resources and ensuring an adequate level of expertise is available to address the needs of steroid users, this has not occurred at many SEP. It may be argued that the attraction of anabolic steroid users to agency based SEP is a vindication of the level of service provided. However, the question remains; is the provision of clean injecting equipment enough? In particular when one considers the many differences in the anabolic steroid and opiate injecting population, for example, differences in motivation for use, intramuscular rather than intravenous administration, potential side effects,

issues around cessation of drug use and indeed, the social demographics of the populations (Korkia & Stimson, 1993; Lenehan & McVeigh, 1998). These differences, amongst many, together with the specific cultural context in which these drugs are used, would indicate the need for diverse harm reduction strategies for these injecting drug users; targeted information, appropriate health intervention and monitoring and an in-depth knowledge of anabolic steroids and the array of other performance enhancing drugs often used in combination with these drugs (Lenehan et al., 1996a).

Of additional concern is the evidence that SEP, in many cases, are the only point of drug service contact for anabolic steroid users, with structured drug treatment data indicating that only five anabolic steroid users were in contact with these service in Merseyside and Cheshire during 2001–2002 (Beynon, McVeigh, & Bellis, 2003). Furthermore, research conducted in the North West of England, in which 386 anabolic steroid users were interviewed, identified that less than half (43%) of steroid users had informed their General Practitioner of their drug use and only 22% were in receipt of health monitoring in relation to their anabolic steroid use (Lenehan, Bellis, & McVeigh, 1996b). Therefore, for significant numbers of steroid users, agency based SEP constitute the only point of contact for harm reduction and health intervention relating to their drug use.

The decrease in the number of heroin injectors new to SEP is of particular concern. While there is a paucity of robust evidence to identify any change in the incidence of new injectors, reported data from structured drug treatment (Liverpool John Moores University & University of Manchester, 2001) indicates a continuing trend of injecting heroin users presenting to treatment. Furthermore, routine monitoring of pharmacy based SEP illustrates continuing uptake of this service by intravenous injectors (drug of injection is not recorded at pharmacy based SEP but data relating to the size of needles provided are collected) new to SEP (Beynon, Birtles, et al., 2001).

Therefore, the utilisation of pharmacy based SEP may account, at least in part, for the decrease in new heroin injectors presenting to agency based SEP. However, if heroin injectors are accessing pharmacy rather than agency based SEP, this is of concern. While pharmacies are well positioned to provide syringe exchange services and in some caSEP may be able to provide appropriate information and advice to injectors, in general, agency based SEP should be able to provide a greater level of expertise, time and resources to address the needs of injecting drug users.

The reduction in the frequency of client visits to agency based SEP by both opiate and anabolic steroid injectors is of additional concern. In particular, the reduction in frequency of visit and the increase in the number of clean syringes taken by opiate users may indicate that substantial numbers of these injectors are choosing to reduce their level of engagement with these services. A rationale for this phenomenon is unclear. While an increase in the number of syringes taken at SEP transactions may be symptomatic of changes in drug

use practices, for example, the increase in poly drug use, in particular the rise in the injection of heroin and crack/cocaine (Liverpool John Moores University & University of Manchester, 2001), this would not readily explain the decrease in transaction frequency. The hypothesis of an increasing different population of injecting drug users (anabolic steroid injectors) utilising SEP, resulting in a barrier to regular service uptake by opiate users cannot be dismissed. Whatever the reason for the reduction in ongoing regular engagement by opiate users, it would appear that services need to identify causes and implement appropriate strategies to attract injectors on a regular basis. While injectors are attending less frequently, it is essential the SEP staff take full advantage of engagement opportunities to deliver harm reduction interventions.

There are limitations in the routine monitoring of low threshold drug service activity such as that occurring at agency based SEP. It is necessary to find an appropriate balance between the need for comprehensive, robust data and to ensure that information demands do not act as a hindrance to service delivery or as a barrier to service uptake. Limited data are collected relating to main drug of use, with this information only requested on an injectors first presentation to a specific service. Therefore data do not provide a comprehensive view of injectors drug use, in particular it fails to reflect polydrug use. Additionally, with the information recorded on first presentation only, changing patterns in main drugs of injection cannot be identified. However, high volume, consistent reporting from agency based SEP over time enable the clear identification of trends in main drug of use in new SEP clients and in the changing service utilisation by clients. While surveillance data can provide robust intelligence relating to agency based SEP client characteristics and service uptake there is a need for more detailed research strategies to be developed to identify the rationales for changing trends.

Conclusion

The need for harm reduction interventions, in particular the provision of syringe exchange services to ensure the continued low prevalence of HIV and to combat the further escalation of hepatitis C amongst injecting drug users is unquestionable. However, evidence from this study indicates a decline in the number of new heroin injectors attracted to these services, without evidence of any significant decline in the number of individuals engaging in heroin use or injecting in the UK (Ramsay, Baker, Goulden, Sharp, & Sondhi, 2001). Furthermore, injectors would appear to be attending these services less frequently. For harm reduction strategies to be fully effective, injectors not only need to be attracted to these services, they must also be engaged on a regular basis. This study has also identified the requirement to address the needs of a diverse population of injecting drug users including anabolic steroid users. Finally, as identified by Parsons et al. (2002) there is a need for a national rou-

tine monitoring system of all syringe exchange services, to establish if findings reported here are unique to Merseyside and Cheshire and to identify other emerging issues at national, regional and SEP provider level. This study identifies the strategic uses of data collection from SEP and the value of routine monitoring.

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